FEDOTOVA, O.Ya.; LOSEV, I.P.; KERBER, M.L.; FORTUNATOV, O.G.

Production of aliphatic-aromatic polyamides by nonequilibrium polycondensation reaction. Zhur. VKHO 5 no.1:111-112 '60. (MIRA 14:4)

1. Khimiko-tekhnologicheskiy institut imeni D.I.Mendeleyeva. (Amides)

28183

S/190/61/003/010/012/019
B124/B110

15.8680

AUTHORS: Fedotova, O. Ya., Kerber, M. L., Losev, I. P., Genkina, G. K., Dynina, L. B.

TITLE: Some properties of aromatic and aryl-aliphatic polyamides prepared by interfacial polycondensation. II

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 10, 1961, 1524 - 1527

TEXT: The authors studied the effect of different organic solvents, of the concentration of reagents, of lyes and emulsifiers upon the non-equilibrium interfacial polycondensation of aromatic diamines (p-phenylene diamine, 4,4'-diamino-diphenyl (benzidine), diamino-diphenyl methane, 4,4'-diamino-diphenyl ethane (DPE)) with chlorides of dicarboxylic acids (sebacic-acid chloride). The aim of the present study was to synthesize polymers having higher molecular weight and higher strength than those synthesized as yet. Polycondensation was conducted in a device for milling tissues. The results obtained as to the effect of the nature of the organic solvent upon the viscosity of the polymer for a concentration of reagents of 0.05 moles/liter are given in a table. Therefrom, it

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becomes evident that (except for DPE which has the highest viscosity in CCl_4) the best results are obtained in aromatic hydrocarbons. Since the polymer is poorly soluble in all these solvents, the effect of these solvents depends upon the different polarity of molecules. The viscosity of the polymer depends slightly on the concentration of the initial components in the range of 0.005 to 0.05 moles/liter; an exception is the polymer of DPE, the viscosity of which considerably increases between 0.0125 and 0.015 moles/liter (Fig. 1). The viscosity of the polymer proved to be independent of the excess of initial components. Fig. 3 shows that the viscosity of polyamide solutions increases up to a KOH excess of 2 - 2.5 equivalents; the viscosity of the polymer on the basis of benzidine, however, anomalously increases in acid solution. This phenomenon could not be explained as yet. Also the effect of three different types of emulsifiers upon the viscosity of polyamides was studied, viz., of the high-molecular protective type (Solvar = incompletely saponified polyvinyl acetate), of the ionogenic type (sodium lauryl sulfonate), and of the non-ionogenic type (OП-10 (OP-10) = ester of isooctyl phenol and of polyethylene glycol with 10 hydroxy-ethyl groups). Best results were obtained when using 0.3% OP-10 referred to

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Some properties of aromatic...

the aqueous phase. The viscosity of the polymer on the basis of benzidine increased to nearly the double, that of the polymer of DPE to the 1.5-fold. The viscosity of other polymers increased somewhat less. By observing the optimum conditions found, it was possible to obtain polymers of an intrinsic viscosity of 0.6 - 0.7 in concentrated H_2SO_4.

L. B. Sokolov (Ref. 2: Vysokomolek. soyed. 1, 698, 1960) is mentioned. There are 3 figures, 1 table, and 3 references: 2 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: British Patent no. 737184.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Institute of Chemical Technology imeni D. I. Mendeleyev)

SUBMITTED: November 19, 1960

Card 3/6

28184

S/190/61/003/010/013/019
B124/B110

15.8080

AUTHORS: Fedotova, O. Ya., Kerber, M. L., Losev, I. P.

TITLE: Some properties of aromatic and aryl-aliphatic polyamides prepared by interfacial polycondensation. III

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 10, 1961, 1528-1534

TEXT: The authors determined the intrinsic viscosity of a number of polyamides synthesized from aromatic diamines, sebacic and terephthalic acids by polycondensation in the melt and at the interface. The intrinsic viscosity of the polymers was measured on 0.5% solutions in 96% H_2SO_4 at $20 \pm 0.05^{\circ}C$ by an Ostwald-Pinkevich viscosimeter having a capillary diameter of 1.2 mm. Since some polymers were little soluble and formed gels at room temperature, their viscosity was determined for a 0.2% concentration at 20 and $40^{\circ}C$. Results and data taken from the literature are given in Table 1. The products obtained by polycondensation in the melt and at the interface differ only slightly to their viscosity. The low viscosity of the solutions of the products obtained is explained by

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the rigid structure of the initial components and the polymers. Products of a viscosity higher than 0.6-0.75 could not be obtained even when using emulsifiers. Thermomechanical curves plotted by the Tsetlin device showed the following: The first ascent of the deformation curve lies in the melting range (200-300°C), and usually somewhat above the creep temperature of the polymer. Only the melting point of the benzidine polymer lies considerably higher, which could not be explained as yet. Also the intensive gas evolution lies in the range of the first ascent of the deformation curve. The lower deformability of products prepared by polycondensation in the melt (~500°C) as compared to that of the products obtained by interfacial polycondensation can be reduced to a slight cross-linking due to longer heating when synthesizing the polymer in the melt. The polymers studied behaved like solid, heat-resistant plastics. They decomposed at about 500°C without transition to the high-elastic state. The curves of distribution of the X-ray intensity to the scattering angles were plotted by means of a УРС-50-И (URS-50-I) apparatus for filtered Cu-radiation. Thus, it was found that the major part of the polymers has an oriented structure changing with the structure of the initial substances. The constants determined from curves for some typical polymers are given in Table 2. The authors thank A. V. Yermolina, head of the team for X-ray

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structural analysis of the NIIPM, for assistance in recording and interpreting the X-ray diagram. There are 3 figures, 2 tables, and 10 references: 6 Soviet and 4 non-Soviet. The two references to English-language publications read as follows: P. W. Morgan, SPE, Journal, 15, 485, 1959; O. B. Edgar, R. Hill, J. Polymer Sci., 8, 1, 1952.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Institute of Chemical Technology imeni D. I. Mendeleyev)

SUBMITTED: November 19, 1960

Table 1. Intrinsic viscosities of polyamides in sulfuric acid[1]).
Legend: (A) Diamine; (B) acid; (C) products of interfacial polycondensation; (D) conditions of determination; (E) temperature, °C; (F) concentration, %; (G) η_{intr}; (H) products of polycondensation in the melt; (J) p-phenylene diamine; (K) ditto; (L) 4,4'-diamino-diphenyl (benzidine); (M) 4,4'-diamino-3,3'-dimethyl diphenyl (tolidine); (N) 4,4'-diamino-di-

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FEDOTOVA, O.Ya.; LOSEV, I.P.; SKRIPCHENKO, N.I.; FILICHKINA, V.N.

Synthesis and study of N,N'-substituted polyureas. Izv. vys. ucheb. zav.; khim. i khim. tekh. 4 no. 2:271-274 '61. (MIRA 14:5)

1. Moskovskiy khimiko-tekhnologicheskiy institut im. D.I. Mendeleyeva. Kafedra tekhnologii vysokomolekulyarnykh soyedineniy. (Urea)

LOSEV, Ivan Platonovich; FEDOTOVA, Ol'ga Yakovlevna; AVRAMOVA, N.S., red.; SHPAK, Ye.G., tekhn. red.

[Laboratory work in the chemistry of high polymers]Praktikum po khimii vysokopolimernykh soedinenii. 2. izd., dop. i perer. Moskva, Goskhimizdat, 1962. 227 p. (MIRA 15:9)
(Polymers)

FEDOTOVA, O.Ya.; SHTIL'MAN, M.I.; LOSEV, I.P.; Prinimala uchastiye FEDOTOVA, Z.S.

Cyanoethylation of hexamethylenediamine. Zhur.ob.khim. 32 no.7:2314-2316 Jl '62. (MIRA 15:7)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.
(Hexanediamine) (Cyanoethylation)

CHERNIN, I.Z.; LOSEV, I.P.; FEDOTOVA, O.Ya.

Effect of some plasticizers on the adhesion, aging, and chemical stability of films from epoxide compounds. Lakokras. mat. i ikh prim. no.3:26-27 '63. (MIRA 16:9)
(Protective coatings) (Plasticizers)
(Epoxy resins)

S/190/63/005/002/011/024
B101/B102

AUTHORS: Fedotova, O. Ya., Losev, I. P., Skripchenko, N. I.

TITLE: Study of the reaction of aromatic diamines with diisocyanates. I. The effect of some factors

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 5, no. 2, 1963, 222-226

TEXT: Based on the reaction of N,N-diethyl-4,4'-diamino diphenyl methane with hexamethylene-1,6-diisocyanate as example, the effect of organic solvents, concentration and temperature on the polymerization is studied in order to find general rules pertaining to the reaction of aromatic diamines with diisocyanates. Polymerization was conducted at 20°C and with a concentration of 0.2 mole/l in the solvents: benzene, chloro benzene, acetone, cyclohexanone, tetrahydrofuran, and methanol. In methanol the reaction was instantaneous; in tetrahydrofuran it was completed after 60 min with 80% conversion; in acetone 80% conversion was obtained only after 6 hrs. In the remaining solvents, the conversion was insignificant and the reaction proceeded slower. Addition of 5% H_2O to the acetone accelerated the

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reaction: in anhydrous acetone 50% conversion was obtained within 130 min, with addition of 5% H_2O already in 27 min. Hydroxyl-containing solvents had generally an accelerating effect. The molecular weight proved independent of the nature of the solvent, the intrinsic viscosity was always 0.90-0.97. Polymerization of equimolecular parts of the components at 20°C in cyclohexanone showed that 35% conversion was reached with a concentration of 0.2 mole/l within 110 min, with 0.1 mole/l within 172 min, and with 0.05 mole/l within 390 min. At 20°C and 0.2 mole/l 50% conversion was obtained within 228 min, at 80°C in 21 min. There are 2 figures.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Institute of Chemical Technology imeni D. I. Mendeleyev)

SUBMITTED: August 14, 1961

Card 2/2

S/190/63/005/002/012/024
B101/B102

AUTHORS: Fedotova, O. Ya., Losev, I. P., Skripchenko, N. I.

TITLE: Study of the reaction of aromatic diamines with diisocyanates. II. Reactivity of some aromatic diamines

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 5, no. 2, 1963, 227-232

TEXT: To clear up the conditions for the synthesis of polyureas, the effect of substituents on the reactivity with hexamethylene-1,6-diisocyanate was studied in cyclohexanone solution. The diamines used were: 4,4'-diamino-diphenyl methane (I); N,N'-dimethyl-4,4'-diamino-diphenyl methane (II); N,N'-dimethyl-4,4'-diamino-diphenyl methane (III); N,N'-dipropyl-4,4'-diamino-diphenyl methane (IV); N,N'-dibutyl-4,4'diamino-diphenyl methane (V); 4,4'-diamino-3,3'-dimethyl-diphenyl methane (VI); and N,N'-diethyl-4,4'-diamino-3,3'-dimethyl-diphenyl methane (VII). At 20°C, the degree of conversion (%) and time (min) were: I, 70, 360; II, 60, 480; III, 63, 480; IV, 55, 480; V, 60, 480. At 60°C, the reaction rate was higher and the difference between II, III and V was less. Thus

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B101/B102

N-alkylation retards the reaction rate, the size of the alkyl radical being of little importance. Results for ring-substituted diamines: with VI, 50% conversion was obtained at 20°C within 270 min and at 60°C within 45 min, while the corresponding data for I are 120 and 24. With VII, 16% conversion was effected at 20°C within 480 min, at 60°C within 60 min. The activation energies (cal/mole) are for: I 9100; II 7800; VI 14,000; VII 10,700. A comparison of the reaction rates of III and VII with hexamethylene-1,6-diisocyanate, m-toluylene diisocyanate, 3,3'-dimethyl-4,4'-diisocyano-diphenyl methane and naphthylene-1,5-diisocyanate at 20°C showed that III reacts more rapidly than VII. With VII, the reaction rate with m-toluylene diisocyanate was initially equal to that with naphthylene-1,5-diisocyanate, but decreased sharply when 60% conversion had been reached. Substitution of diamines influenced the rate of their reaction with all diisocyanates in the same sense. There are 3 figures and 2 tables.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Institute of Chemical Technology imeni D. I. Mendeleyev)

SUBMITTED: August 14, 1961

Card 2/2

S/190/63/005/003/012/024
B101/B186

AUTHORS: Fedotova, O. Ya., Losev, I. P., Kozyreva, N. M.

TITLE: Some properties of aromatic and arylaliphatic polyamides obtained by interfacial polycondensation. IV

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 5, no. 3, 1963, 363-367

TEXT: The polymers obtained by interfacial polycondensation of fumaric dichloride with N,N'-diethyl-, N,N',dipropyl-, or N,N'-dibutyl-4,4'-diamino-3,3'dimethyldiphenylmethane at 20°C had higher intrinsic viscosities and higher melting points than those obtained by polycondensation in the melt. Among the solvents for fumaric dichloride, benzene, toluene, carbon tetrachloride and heptane benzene proved to the best. The reaction was completed within 20 min. A 10% diamine excess gave polymers with a somewhat higher intrinsic viscosity, e.g. in the N,N'-diethyl compound 0.090 instead of 0.080 for a 0.5% solution in benzene. An excess produced no effect when better soluble hydrochlorides of the diamines were used. The optimum pH was dependent on the length of the alkyl radical and was 1.6 - 1.8 for the N,N'-diethyl compound, 1.2 - 1.3 for the N,N'-dipropyl compound while for the N,N'-dibutyl compound the addition of 1/mole HCl per mole of diamine

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produced the best results. The optimum concentration for all diamines studied was between 0.2 and 0.3 mole/l. Ionogenic emulsifiers like sodium lauryl sulfate, sodium oleate, sulfonate, quaternary ammonium salt of the diethylaminomethyl derivatives of the poly-isooctyl phenyl ethylene glycol ethers reduced the molecular weight and the yield while the non-ionogenic emulsifier OП-10 (OP-10) hardly influenced the intrinsic viscosity and the yield. The polymers are linear, well soluble and meltable (m.p. 205-230°C), and suitable for the manufacture of films or molded articles. There are 3 figures and 3 tables.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Institute of Chemical Technology imeni N. D. Mendeleyev)

SUBMITTED: August 15, 1961

S/190/63/005/004/008/020
B101/B220

AUTHORS: Fedotova, O. Ya., Losev, I. P., Zakoshchikov, S. A.

TITLE: Reaction of low dicarboxylic acids with 4,4'-diamino-3,3'-dimethyl-diphenyl methane

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 5, no. 4, 1963, 531-534

TEXT: To determine the exact conditions for the synthesis of polyamides from 4,4'-diamino-3,3'-dimethyl-diphenyl methane (DA) and oxalic acid, malonic acid, glutaric acid or pimelic acid, first the decomposition temperature of these acids was determined again on the basis of the breaks in the pressure-versus-temperature curves. In this study, DA was brought into reaction with glutaric or pimelic acid in CO_2 atmosphere at 140 - 220°C. The content of acid and amino groups in the polymer was determined as a function of temperature and reaction time and it was found that at a given temperature this approaches a constant value within a definite time. At 220°C the time was less than 60 min. The polyamides obtained are vitreous substances soluble only in cresol or sulfuric acid. The polyamide from diethyl oxalate had a m.w. of 2210, m.p. 210 - 228°C and de-

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composition set in at 260°C; for the polyamide from diethyl maleinate these values are 3610, 205 - 220°C, 287°C; for the polyamide from glutaric acid: 5400, 256 - 260°C, 360°C; and for the polyamide from pimelic acid 6000, 198 - 215°C, 340°C. There are 4 figures and 2 tables.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Institute of Chemical Technology imeni D. I. Mendeleyev)

SUBMITTED: September 18, 196

L 12434-63 EPR/EWP(j)/EPF(c)/EWT(m)/BDS ASD Ps-4/Pc-4/Pr-4
RM/WW/JW
ACCESSION NR: AP3001150 S/0190/63/005/006/0822/0825

12
71

AUTHOR: Fedotova, O. Ya.; Grozdov, A. G.

TITLE: Reaction of aromatic diamines with diisocyanates. 3. Reaction of diamines with diisocyanates

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 5, no. 6, 1963, 822-825

TOPIC TAGS: aromatic diamines, diisocyanates, polyurea, tertiary amines

ABSTRACT: This paper presents a study of the reaction between 4,4'-diamino-diphenylsulphone and hexamethylene diisocyanate. When solutions of these in acetone were mixed, no polymer formation took place. When the mixture was allowed to stand for 24 hours, a low-molecular substance was precipitated upon the addition of benzene. It represents the reaction product of two molecules of the diamine with two molecules of isocyanate. From the filtrate another reaction product was obtained, consisting of one molecule each of the two reagents. In the presence of catalysts, such as triethylamine, pyridine, and dimethylanyline, the polymerization reaction was enhanced, producing polymers of molecular weight 260, 850, 1830, and 4300. It was found that the effectiveness of the catalyst decreased with the decrease in its dissociation constant. Various fractions of the polymerization product were

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ACCESSION NR: AP3001150

separated by solvents, and their elementary composition, as well as the isocyanate and amine numbers were determined. Orig. art. has: 3 tables.

ASSOCIATION: Moskovskiy khimico-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Chemico-Technical Institute)

SUBMITTED: 13Nov61 DATE ACQ: 01Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 003 OTHER: 001

Card 2/2

L 12424-63 EWP(j)/EPF(c)/EWT(m)/BDS ASD Pc-4/Pr-4 RM/WW/JW

ACCESSION NR: AP3001161 S/0190/63/005/006/0881/0885 68 67

AUTHOR: Fedotova, O. Ya.; Kerber, M. L.; Losev, I. P.

TITLE: Some properties of aromatic and arylaliphatic polyamides obtained by interfacial polycondensation. 5.

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 5, no. 6, 1963, 881-885

TOPIC TAGS: interfacial polycondensation, aromatic polyamides, arylaliphatic polyamides, terephthalyl chloride

ABSTRACT: In an earlier paper the authors described polymers obtained by interfacial polycondensation of terephthalyl chloride with N-alkylated diamines of the diphenylmethane and ditolylmethane series which possessed a high melting point (up to 300C) with good solubility in a number of organic solvents. The present work was aimed at a closer study of the reaction, using secondary aromatic diamines, such as N,N'-dimethyl-, N,N'-diethyl-, N,N'-dipropyl-, and N,N'-dibuthyl-4,4'-diaminodiphenylmethane. The polycondensation products of these with terephthalyl chloride showed a lowering of viscosity with the size of the substituent. It was found that the optimal amounts of the HCl acceptor constituted from 0.5 to 1.5 equivalents and that the viscosities of the obtained polymers reached maximal

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L 12424-63

ACCESSION NR: AP3001161

values in benzene and carbon tetrachloride media, in which the polymer was soluble. Orig. art. has: 3 figures.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Chemico-Technological Institute)

SUBMITTED: 07Dec61 DATE ACQ: 01Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 005 OTHER: 001

Card 2/2

L 12426-63 EWP(j)/EWT(m)/BDS AFFTC/ASD Pc-4 RM
ACCESSION NR: AP3001164 S/0190/63/005/006/0900/0904

AUTHOR: Fedotova, O. Ya.; Losev, I. P.; Kozy*reva, N. M.; Barabanova, G. V.; Churochkina, N. A.

64
62

TITLE: Some properties of unsaturated polyamides

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 5, no. 6, 1963, 900-904

TOPIC TAGS: polycondensation, polyamides, interfacial polycondensation, fumaric acid

ABSTRACT: The present study is a continuation of earlier work on the synthesis and properties of unsaturated polyamides obtained by the methods of equilibrium condensation in the melt as well as by interfacial polycondensation. Using the first method, the synthesis of polyamides from N,N'-diethyl and N,N'-dipropyl derivatives of 4,4'-diamino-3,3'-dimethyldiphenylmethane and fumaric acid in a 1:1 ratio was achieved, the optimal reaction temperatures being 180 and 200C, and the reaction time 7 hours. The obtained polyamides are transparent, glassy, brittle substances, of lower molecular weight and melting point than the same polyamides produced by interfacial polycondensation, which are hard white substances. It was shown that the polymers obtained by the latter method possess thermomechanical properties

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ACCESSION NR: AP3001164

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characteristic for crystalline polymers. Spectrophotometric turbidimetric titrations of 0.01% solutions in formamide, using water as a precipitant, revealed a higher state of polydispersion of the polyamides obtained by equilibrium polycondensation in the melt. Orig. art. has: 5 charts.

ASSOCIATION: Moskovskiy khimico-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Chemical-Technical Institute)

SUBMITTED: 08Dec61	DATE ACQ: 01Jul63	ENCL: 00
SUB CODE: 00	NO REF SOV: 002	OTHER: 000

Card 2/2

FEDOTOVA, O.Ya.; ZAKOSHCHIKOV, S.A.; LOSEV, I.P. [deceased]

Some properties of aromatic and aryl aliphatic polyamides obtained by interfacial polycondensation. Part 6. Vysokom.soed. 5 no.11: 1671-1674 N '63. (MIRA 17:1)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva.

L 10688-63 EWP(j)/EPF(c)/EWT(m)/BDS--ASD--Pc-4/Pr-4--RM/WW
ACCESSION NR: AP3002399 S/0153/63/006/002/0260/0262

AUTHOR: Fedotova, O. Ya.; Shtil'man, M. I.

65

TITLE: Sulfonation of arylaliphatic polyamides and polyureas

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 6, no. 2, 1963, 260-262

TOPIC TAGS: sulfonation, polyamides, polyureas, inert solvent

ABSTRACT: The polymers were treated with concentrated sulfuric acid and oleum containing 5 to 35% sulfur trioxide at 50 degrees, even 10 hour reaction times, large excesses of oleum, or high sulfur trioxide concentrations gave only less than 2% sulfur in the product. Increased sulfur content and titratable acidity was obtained in sulfonations above 70 degrees but this was accompanied by extensive destruction and blackening of the polymer. Concentrated sulfuric acid may be used as an inert solvent for polyamides and polyureas. Orig. art. has: 4 figures.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva. Kafedra tekhnologii organicheskikh i elementoorganicheskikh vy*sokomolekulyarny*kh soyedineniy (Moscow Institute of Chemical Technology. Department of Organic and Organoelemental High Molecular Compounds)

Card 1/2

FEDOTOVA, O. Ya.; SKRIPCHENKO, M. I.; LOSEV, I. P.

Some kinetic properties of the reaction of aromatic diamines with 1,6-hexamethylene diisocyanate. Zhur. VKHO 8 no.2:230-231 '63. (MIRA 16:4)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D. I. Mendeleyeva.

(Amines) (Cyclohexane) (Reaction, Rate of)

KERBER, M.L.; FEDOTOVA, O.Ya.; LOSEV, I.P. [deceased]

Radiation stability of aromatic and aryl aliphatic polyamides.
Plast.massy no.4:20-23 '64. (MIRA 17:4)

(BR)

ACCESSION NR: AP4030360 S/0190/64/006/003/0452/0458

AUTHORS: Fedotova, O. Ya.; Kerber, M. L.; Losev, I. P. (Deceased)

TITLE: Some properties of aromatic and arylaliphatic polyamides prepared by interfacial polycondensation. 9

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 3, 1964, 452-458

TOPIC TAGS: polyamide, aromatic polyamide, arylaliphatic polyamide, N-alkylated polyterephthalamide, terephthalyl chloride, dinucleararomatic diamine, polycondensation, interfacial polycondensation, N-substituted polyamides, crystalline structure, solubility.

ABSTRACT: Synthesis of polyamides was conducted at 20C in an apparatus (provided with a fast stirrer), using a technique described in an earlier paper by the authors (Vy*sokomolek. soed., 2, 1020, 1960). In the present study the aqueous phase contained 0.2 mole/liter of terephthalyl chloride and 1 equivalent of alkali, while the organic benzene phase contained 0.2 mole/liter of dinuclear aromatic diamines carrying an alkyl radical at the nitrogen atom. The physico-chemical properties of the obtained N-alkylated polyterephthalamides were investigated.

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ACCESSION NR: AP4030360

They were found to have lower melting points and higher solubility in organic solvents. It was observed that an increased number of alkyl substituents at the nitrogen enhanced the solubility of the polyamides, while the length of the carbon chain was ineffective. The solubility of the polyamides in organic solvents made it possible to determine their molecular weight, which was 50 000 - 60 000, as compared with 10 000 - 12 000 for similar polymers prepared in the melt. X-ray studies revealed that the N-alkylated polyterephthalamines possessed a certain degree of orderliness in their structure, thus confirming their partially crystalline structure. Thanks are given to S. A. Pavlova and I. I. Tverdokhlebova for the determinations of molecular weights by the light-scattering technique. Orig. art. has: 1 table and 4 charts.

ASSOCIATION: Moscovskiy khimico-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Chemicotechnical Institute)

SUBMITTED: 04Mar63 DATE ACQ: 07May64 ENCL: 00

SUB CODE: CH NO REF SOV: 007 OTHER: 000

Card 2/2

L 6656-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4/Pa-4 RPL JW/RM
ACCESSION NR: AP4045422 S/0190/64/006/009/1565/1569

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AUTHOR: Fedotova, O. Ya.; Shtil'man, M. I.; Khofbauer, E. I.; Losev, I. P.

TITLE: Polyamides prepared from dicyanoethylated diamines and dicarboxylic acids

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 6, no. 9, 1964, 1565-1569

TOPIC TAGS: polyamide, polyamide synthesis, diamine, dicarboxylic acid, cyanoethylamine, polycondensation

ABSTRACT: The authors describe the preparation and properties of the poly-/N,N'-di-(β-cyanoethyl)-hexamethyleneamides/ of oxalic, malonic, succinic, glutaric, adipic, pimelic, suberic, azelaic, and sebacic acids, as well as the polyamides of adipic acid with N,N'-(β-cyanoethyl)-4,4'-diaminodiphenyl, N,N'-di-(β-cyanoethyl)-4,4'-diaminodiphenylmethane, N,N'-di-(β-cyanoethyl)-4,4'-diamino-3,3'-dimethyldiphenyl, and N,N'-di(β-cyanoethyl)-4,4'-diamino-3,3'-dimethyldiphenylmethane. The 7-hour reaction was conducted at 160-210C in dry purified nitrogen (particulars are not given). The N-containing side chains were determined by heating polymer samples with orthophosphoric acid, at 150-170C, adding excess alkali, and distilling the released ammonia into 0.5 N hydrochloric acid. The acid and amine numbers were determined by potentiometric

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L 4656-65

ACCESSION NR: AP4045422

titration of methanol solutions of the polyamides with metanol solutions of HCl and KOH. The infrared spectra were taken with a UR-10 spectrophotometer from polymer films spread on sodium chloride plates. Deformation was determined in relation to temperature, as well as specific viscosity and dropping temperature. These characteristics of the products are tabulated. "Z. S. Fedotova assisted in the experimental work." Orig. art. has: 3 tables, 3 figures and 1 structural formula.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Chemical-Technological Institute)

SUBMITTED: 30Aug63 ENCL: 00 SUB CODE: OC

NO REF SOV: 002 OTHER: 000

Card 2/2

L 32461-65 EWT(m)/EPF(c)/EWP(j)/EPR/EWA(c) Pc-4/Pr-4/Ps-4 RPL WW/RM
ACCESSION NR: AR4044607 S/0081/64/000/010/S040/S040

SOURCE: Ref. zh. Khimiya, Abs. 10S240

AUTHOR: Skripchenko, N. I.; Fedotova, O. Ya.; Losev, I. P.

TITLE: Some properties of aromatic and arylaliphatic polyureas

CITED SOURCE: Tr. Mosk. khim.-tekhnol. in-ta im. D. I. Mendeleyeva, vyp. 42, 1963, 130-136

TOPIC TAGS: polyurea, polyurea solubility, polyurea mechanical property, aromatic polyurea, arylaliphatic polyurea, aromatic diamine, alkylene diisocyanate

TRANSLATION: The authors synthesized a series of relative low-molecular-weight polyureas ($\eta_{sp} = 0.055$-0.227) from primary and secondary aromatic diamines (the diphenylmethane series) and 1,6-hexamethylen-, 1,5-naphthylen- and m-toluylen-diisocyanate (equimolar amounts). The authors found that when 1,6-hexamethylene diisocyanate is replaced by an aromatic diisocyanate, the melting point of the polyureas from primary diamines (227-326C) rises by 10-30C, but at the same time there is a sharp decrease in molecular weight and increase in rigidity of the macromolecules, thus preventing polymer flow. Polyureas based on secondary

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L 32461-65

ACCESSION NR: AR4044607

3

aromatic diamines are characterized by high solubility in organic solvents and by lower melting points (256-307C); the thermomechanical curves of the polyureas are characterized by a definite temperature dependence. N,N'-alkylation of the diamines leads to a 150-200C decrease in the melting points of polyureas based on 1,6-hexamethylene diisocyanate, and to a significant increase in the melting point (to 314C) in the case of aromatic diisocyanates. Polyureas from secondary aromatic diamines, obtained with a 100% excess of 1,6-hexamethylene diisocyanate, are soluble in phenol and cresol, have an η_{sp} as high as 0.53 (0.5% solution in concentrated H_2SO_4 at 20C) and a significant range of high elasticity. they can be used to manufacture parts by pressing and pressure casting.

ENC

Card 2/2

L 27875-65 EWT(m)/EPF(c)/EPR/EWP(j)/T/EWA(c) Pc-4/Pr-4/Ps-4 RPL WW/GS/RM

ACCESSION NR: AT4049844 S/0000/64/000/000/0080/0085

AUTHOR: Fedotova, O. Ya.; Shtil'man, M. I.; Lapteva, I. A.

35
33
B+1

TITLE: Chemical reactions of polyureas

SOURCE: Khimicheskiye svoystva modifikatsiya polimerov (Chemical properties and the modification of polymers); sbornik statey. Moscow, Izd-vo Nauka, 1964, 80-85

TOPIC TAGS: polyurea, nitration, reduction, hexamethylene diisocyanate, infrared absorption spectrum, nickel catalyst, primary diamine, secondary diamine, diphenylmethane derivative

ABSTRACT: In order to clarify the chemical reactions of polyureas, the nitration and subsequent reduction of some arylaliphatic polyureas of relatively low molecular weight were studied. Polyureas prepared by the reaction of 4,4'-diamino-3,3'-dimethyldiphenyl methane and hexamethylene diisocyanate, with a molecular weight of about 5000 (by viscosity), and the reaction of N,N'-diethyl-4-4'-diamino-3,3'-dimethyldiphenyl methane and hexamethylene diisocyanate, with a molecular weight of 2300, were tested. The purified, yellowish powder, obtained by treating the polymer from the primary diamine with nitric acid, showed that it is not only nitrated but also degraded. This is shown by the decrease in the specific viscosity of polyureas after nitration. Elemental analysis showed a considerable decrease

Card 1/3

in nitrogen, carbon and hydrogen content. The nitration of polyurea from secondary diamine yielded a polymer, the specific viscosity of which did not differ from that of the initial polymer. This showed the absence of degradation. The introduction of the nitro group into polyurea was confirmed by the peak in absorption in the region of the nitro group (1560 cm^{-1}). The presence of a nitro group in the aromatic rings of the polymer caused the properties of the polymer to change considerably: the melting point in the sealed capillary increased, solubility decreased, and the softening point shifted toward a higher temperature than in the initial polymer. This was a result of the increase in intermolecular attraction due to introduction of the strongly polar nitro group into the polymer. Nitration by nitric acid in the theoretical amount (1 mole HNO_3 per aromatic ring of the polymer) leads to nitro compounds with a nitro group content close to the theoretical. The reduction of the nitropolyureas obtained was accomplished with sodium sulfide (5-7%) and catalytically. The increased alkalinity with sodium sulfide diminished the yield from the primary diamine. Under the same conditions for polyurea obtained from the secondary diamine, no decomposition was observed and the yield corresponded to the initial polymer. No decrease in specific viscosity was observed either. A more complete reduction was obtained with a nickel catalyst and hydrogen in methanol at 40C. It was shown by analysis that, on the average, one amino group became attached to one aromatic ring of the polymer chain. This agrees well with the amount of nitric acid used for nitration and

L 27875-65

ACCESSION NR: AT4049844

reduction. Reduced and nitrated products were less soluble and had a higher melting point than the initial polyurea, due probably to the greater density of hydrogen bonding between the polymer chains. In their properties, the reduction products were close to the nitrated polyureas. Turbidimetric curves obtained for initial and catalytically reduced polyureas had the same character; nitration and subsequent reduction did not change the molecular weight distribution of the polymer. The thermomechanical curves of crosslinked polyureas show great reversible deformation, indicating the presence of regions in a highly elastic state. Orig. art. has: 3 figures and 5 tables.

ASSOCIATION: Khimiko-tekhnologicheskiy institut im.D.I.Mendeleyeva (Chemical engineering institute)

SUBMITTED: 11Jun62 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 001 OTHER: 000

Card 3/3

L 35076-65 EPF(c)/EPR/EWP(j)/EWA(c)/EWT(m)/T Pc-4/Pr-4/Ps-4 RPL RM/WW

ACCESSION NR: AR5006365 S/0081/64/000/024/S026/S026

SOURCE: Ref. zh. Khimiya, Abs. 24S149

AUTHOR: Fedotova, O. Ya.; Shtil'man, M. I.; Lapteva, I. A.

TITLE: Chemical transformations of polyureas

CITED SOURCE: Sb. Vysokomolekul. soyedineniya. Khim. svoystva i modifik. polimerov. M., Nauka, 1964, 80-85

TOPIC TAGS: polymer, polyurea, nitration, catalyst, polyurea plastic

TRANSLATION: In processing polyureas containing an aromatic nucleus in the chain, the introduction of a nitro group into them by nitrating a mixture in the cold state proceeds with a yield corresponding to the quantity of HNO_3 introduced into the reaction where the process is accompanied by the destruction of the polymeric chain of the polyurea, obtained from the primary diamine of 4,4'-diamine-3,3'-dimethyl-diphenylmethane and hexamethylenediisocyanate. This process is apparently accompanied by oxidation which is indicated by the extremely low content of N, C, and H in the nitrated product in comparison with the calculated content. During the nitration of polyurea from the secondary amine of N,N'-diethyl-4,4'diamine-3,3'

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L 35076-65

ACCESSION NR: AR5006365

dimethyldiphenylmethane a polymer was obtained with the same specific viscosity as in the initial sample. The introduction of a nitro group into the polyurea increases the melting and softening temperatures and reduces the solubility of the polymers. Attempts to reduce the polynitroureas with Na-sulfide were unsuccessful in view of the intensive hydrolysis of the unsubstituted polyureas and low yields based on the amino group in the case of N-substituted polyurea. During reduction with H_2 on a Raney nickel catalyst an almost quantitative yield was obtained. The reduced polymers also possess higher melting and softening points and poorer solubility in comparison with the initial sample. The reduced polyureas react with diisocyanates forming cross-linked polymers. Authors' abstract

SUB CODE: OC ENCL: 00

Card 2/2

FEDOTOVA, O.Ya.; SHTIL'MAN, M.I.; LOSEV, I.P. [deceased]

Certain regularities in the interfacial condensation of diethylene-ethylated diamines and diacyl dichlorides. Vys.mol.soed. 6 no.11: 1921-1925 N '64 (MIRA 18:2)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva.

FEDOTOVA, O.Ya.; SHTIL'MAN, M.I.; LOSEV, I.P. [deceased]

Cyanoethylation of diamines. Part 2: Cyanoethylation of aromatic diamines. Zhur.ob.khim. 34 no.1:181-186 Ja '64.

Cyanoethylation of diamines. Part 3: Cyanoethylation of benzidine. Ibid.:187-189

Cyanoethylation of diamines. Part 4: Chromatographic investigation of the cyanoethylation of hexamethylenediamine. Ibid.:189-192
(MIRA 17:3)

1. Moskovskiy khimiko-tekhnologicheskiy institut im. Mendeleyeva.

L 35535-65 EWT(m)/EPF(c)/EWP(j)/EWA(c) Pc-4/Pr-4 JW/RM

ACCESSION NR: AP5008239 S/0286/65/000/005/0130/0130

AUTHORS: Fedotova, O. Ya.; Zakoshchikov, S. A. 25

TITLE: A method for obtaining polyamides. 7 Class 39, No. 151810 15 B

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 5, 1965, 130

TOPIC TAGS: polyamide, dicarboxylic acid, acid chloride, diamine, organic solvent, hydrolysis, hydrogen chloride, alkali

ABSTRACT: This Author Certificate presents a method for obtaining polyamides on the base of acid chloride of dicarboxylic acids and diamines. To increase the yield of the final product, anhydrous solutions of acid chloride and of diamine in an organic solvent are mixed together. The mixture is then hydrolyzed, and the resulting hydrogen chloride is bound in an aqueous solution of alkali.

ASSOCIATION: none

SUBMITTED: 020ct61 ENCL: 00 SUB CODE: OC

NO REF SOV: 000 OTHER: 000

Card 1/1

FEDOTOVA, O.Ya.; GROZDOV, A.G.; SHTIL'MAN, M.I.

Synthesis and study of N-cyanoethylated polyureas. Vysokom. soed. 7 no.2:264-268 F '65. (MIRA 18:3)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva.

L 3547-65 EWT(m)/EPF(c)/EPR/EWP(j)/EWA(c) Pc-4/Pr-4/Ps-4 RPL WW/JW/RM

ACCESSION NR: AP5005600 S/0190/65/007/002/0312/0316

AUTHORS: Fedotova, O. Ya.; Shtil'man, M. I. 34

TITLE: Amidethylated polyureas

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 2, 1965, 312-316

TOPIC TAGS: polymer property, amine group, nitrile group, acid solution

ABSTRACT: The effect of acid on cyanethylated polymers was investigated. Polyureas used in this work were obtained from dicyanethylated hexamethylene diamine and hexamethylene diazocyanate held at room temperature in 98% sulfuric acid, in 85% formic acid, and in a one-to-one mixture of these. X-ray structure, temperature dependence of deformation, melting point, and absorption were then studied. It was found that the side nitrile groups in the polyamide polynitriles are hydrolyzed to amines in the presence of concentrated acids at room temperature. This process is not accompanied by destruction of either principal or side chains. An increase in degree of hydrolysis of the nitrile groups to amines increases the softening temperature of the polymers. The authors have shown that polyamide polynitriles react with tertiary alcohol under conditions of Ritter's reaction.

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L 35474-65
ACCESSION NR: AP5005600

Introduction of a tertiary butyl substitute in the side amide group weakens the intermolecular reaction of amidethylated polymers, lowering the softening temperature. It is impossible to carry out the reaction in a solution of sulfuric acid because of concurrent hydrolysis. Substitution of the amide side chain of the polymer by an alkyl radical not only lowers the softening temperature of the polymer but increases the solubility. Orig. art. has: 3 figures and 2 tables.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Chemical Engineering Institute)

SUBMITTED: 27Apr64 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 004 OTHER: 002

Card 2/2

L 35475-65 EWT(m)/EPF(c)/EPR/EWP(j)/EWA(c) Pc-4/Pr-4/Ps-4 RPL WW/JW/RM
ACCESSION NR: AP5005601 S/0190/65/007/002/0317/0321

AUTHORS: Fedotova, O. Ya.; Shtil'man, M. I.

TITLE: A study of the reaction of cyanethylated polyamides and polyureas with formaldehyde

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 2, 1965, 317-321

TOPIC TAGS: formaldehyde, nitrile group, polymer

ABSTRACT: The authors describe the synthesis and the study of the interaction products of polynitriles with formaldehyde. Initial polymers were polyamides from N,N'-di(β-cyanethyl) hexamethylenediamine and adipic acid dichloranhydride, obtained at the phase boundary, and from polyureas from the same diamide and from hexamethylenediazocyanate. The reaction was carried out in 85% formic acid and in the presence of sulfuric acid as a catalyst. At the end of the reaction, the solution was gelatinized. The products were then washed in water, ammonia solution, and again in water, after which they were dried and analyzed. It was found that cyanethylated polyamides and polyureas react readily with formaldehyde in the presence of strong acids (depending on the formaldehyde concentration) to form soluble or cross-linked polymers with methylenediamine and methylol groups. When

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L 35475-65
ACCESSION NR: AP5005601

formaldehyde is greatly in excess, soluble polymers containing methylol groups are formed. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Chemical Engineering Institute)

SUBMITTED: 27Apr64 ENCL: 00 SUB CODE: OC

NO REF SOV: 002 OTHER: 008

Card 2/2

L 3720-66 EWT(m)/EPF(c)/EWP(j)/T/EWA(c)/ETC(m) RPL WW/RM

ACC NR: AP5025970 SOURCE CODE: UR/0190/65/007/010/1826/1829

AUTHOR: Fedotova, O. Ya.; Grozdov, A. G.; Yelin, I. O.

ORG: Moscow Chemical Technology Institute im. D. I. Mendeleyev (Moskovskiy khimiko-tekhnologicheskiy institut)

TITLE: Synthesis of copolymeric polyureas

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 10, 1965, 1826-1829

TOPIC TAGS: polyurea, copolymeric polyurea, heat resistant plastic, wear resistant plastic

ABSTRACT: Copolymeric polyureas have been prepared by reacting a primary and a tertiary aromatic amine with an aliphatic diisocyanate. It is noted that homopolymeric polyureas are highly heat resistant, hard, and wear resistant but poorly processible because of low solubility and proximity of melting point and decomposition temperature. This work was done to eliminate these drawbacks. The monomers used were 4,4'-diaminodiphenylmethane (I), N,N'diethyl-4,4'-diaminodiphenylmethane (II) and 1,6-hexamethylene diisocyanate. It was found that the properties of the polymers depended on the I/(I + II) mole percent (x). With increasing x, the softening point rose from 70 to 270C, the decomposition temperature dropped from 320 to 260C, and solubility decreased simultaneously. However, these properties did not change in direct proportion to the change in x. The greatest change in properties occurred at high or low x's (and proved

Card 1/2 UDC: 541.64+678.675

L 3720-66

ACC NR: AP5025970

to be associated with a morphology change). For example, at a small x (20%) the softening point is 220C (i.e., 40—50C below the softening point at x = 100%) while the decomposition temperature remained high (300C). It is concluded that copolymeric polyureas can be prepared which are suitable for processing into end products. Orig. art. has: 1 table and 2 figures. [SM]

SUB CODE: MT/ SUBM DATE: 03Dec64/ ORIG REF: 003/ OTH REF: 000/ ATD PRESS: 4120

Card 2/2

FEDOTOVA, O.Ya.; SHTIL'MAN, M.I.

Composition of the salts of diamines and dicarboxylic acids. Izv.vys.ucheb.zav.; khim. i khim.tekh. 8 no.2:262-264 '65. (MIRA 18:8)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva, kafedra organicheskikh i elementoorganicheskikh vysokomolekulyarnykh soyedineniy.

FEDOTOVA, O.Ya.; GROZDOV, A.G.; ZELIN, I.O.

Synthesis of polyurea copolymers. Vysokom.soed. 7 no.10:1826-1829 O '65. (MIRA 18:11)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.

(A) L 13522-66 EWT(m)/EWP(j)/EWA(c) RPL JW/RM

ACC NR: AP6001856 SOURCE CODE: UR/0190/65/007/012/2028/2032

AUTHORS: Fedotova, O. Ya.; Grozdov, A. G.; Rusinovskaya, I. A.

ORG: Moscow Institute of Chemical Engineering im. D. I. Mendeleyev (Moskovskiy khimiko-tekhnologicheskiy institut) 53 B

TITLE: Study of the reaction of aromatic amines with diisocyanates. Reaction catalysts. 5

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 12, 1965, 2028-2032

TOPIC TAGS: catalysis, chemical reaction, chemical reaction kinetics, amine, lead compound, zinc compound, ammonia, sodium carbonate, potassium compound, iron compound, copper compound

ABSTRACT: Results obtained in the study of the effect of various catalysts 1,44,55 upon the rate of reaction of 1,6-hexamethyldiisocyanate with 4,4'-diaminodiphenylmethane (I), of its N,N'-diethyl derivative (II), of 4,4'-diamino-3,3'-dimethyldiphenylmethane (III), of its N,N'-diethyl derivative (IV), of 4,4'-diaminodiphenylsulfoxide (V), and of 4,4'-diaminodiphenylsulfone (VI) are reported. Catalysts used were aliphatic and aromatic tertiary amines, chlorides of lead, zinc, iron, and ammonia, carbonates of sodium, potassium, and iron, acetates of copper and zinc, and organic lead compounds: dibutyl dichloro lead, tetrabutyl lead, and dilauryl dibutyl lead. Synthesis of polyureas was conducted in anhydrous ethyl methylketone at 25C with

Card 1/3 UDC: 541.64+678.675

equimolar amounts of reagents. Quantitative effects of catalysts were determined by comparing kinetic data illustrated in Fig. 1 and obtained by the calorimetric

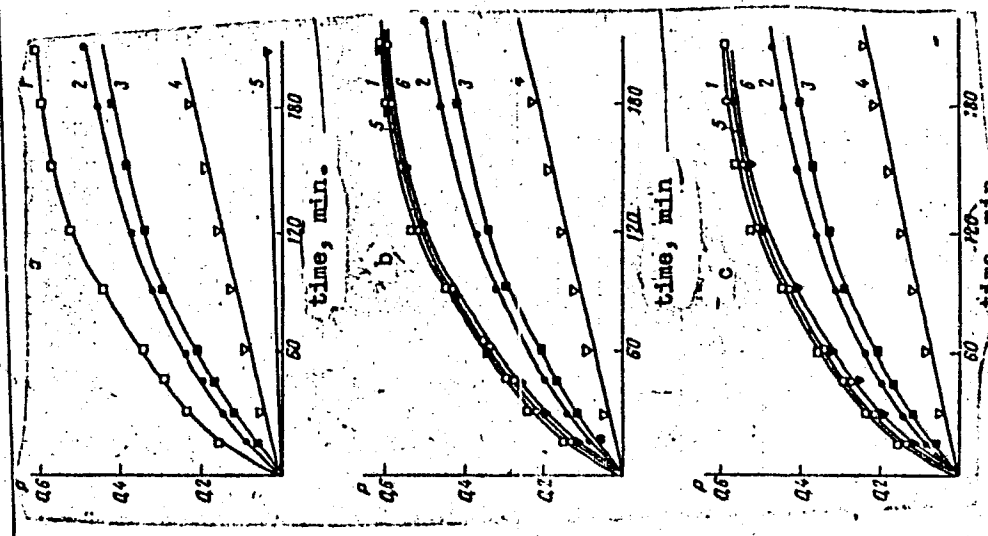

Fig. 1. Kinetic curves obtained for reactions of hexamethyl-diisocyanate with certain aromatic diamines in ethyl-methyl katone at 25C: a - without catalyst; b - with 2.5% dibutyldichlorolead; c - with 5% triethylamine. Number of the curve corresponds to the Roman number of the compound listed in text. P - degree of completion.

L 13522-66

ACC NR: AP6001856

method described by the authors earlier (O. Ya. Fedotova and A. G. Grozdov. Vysokomolek. soyed. 6, 2127, 1964). It was established that aliphatic tertiary amines, lead chloride, and certain lead organic compounds increase the reaction rates proportionally to the concentration of the catalyst. Reactions of I and III were not affected by catalysts. Orig. art. has: 2 tables and 2 figures.

SUB CODE: 07/ SUBM DATE: 17Nov64/ ORIG REF: 001/ OTH REF: 002

Card 3/3

BYKOVA, L.N.; FEDOTOVA, O.Ya.; KOZYREVA, N.M.; PEVZNER, I.D.

Determining the molecular weights of unsaturated polyamides by titration of the end groups in nonaqueous solutions. Plast. massy no.2:53-54 '66. (MIRA 19:2)

FEDOTOVA, O. Ya.; KOZYREVA, N.M.

Copolymerization of unsaturated polyamides with vinyl monomers. Vysokom. soed. 8 no. 1:31-33 Ja '66 (MIRA 19:1)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva. Submitted February 6, 1965.

L 22536-66 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6010119 (A) SOURCE CODE: UR/0190/66/008/003/0536/0539

AUTHOR: Fedotova, O. Ya.; Khoang Kim Tyung; Kozyreva, N. M.; Kolesnikov, G. S.

ORG: Moscow Chemical and Technological Institute im. D. I. Mendeleyev (Moskovskiy khimiko-tekhnologicheskiy institut)

TITLE: Copolymerization of unsaturated polyamides with styrene 31 B

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 3, 1966, 536-539

TOPIC TAGS: copolymerization, polyamide, styrene, polymerization accelerator, polymerization inhibitor

ABSTRACT: A study has been made of copolymerization of poly-3,3'-dimethyldiphenylmethanfumar-N, N'-diethylamide of different molecular weights styrene in the presence of dicyclohexylperoxidicarbonate and accelerators (cobalt naphtenate and dimethylaniline). Thermal NRH-groups in polyamide inhibit copolymerization at a concentration higher than that corresponding to the expenditure of HCl of 2-3 mg/g required for neutralization. The copolymer strength and hardness greatly depend on the molecular weight of the initial polyamide and on the quantity of styrene introduced. Orig. art. has: 3 figures and 2 tables. [Based on authors' abstract.] [NT]

SUB CODE: 07/ SUBM DATE: 15Apr65/ ORIG REF: 001/

Card 1/1 BLG UDC: 66.095.26+678.01:54+678.13+678.675

L 22741-66 EWP(j)/EWT(m) RM/JW

ACC NR: AP6006357 (A) SOURCE CODE: UR/0413/66/000/002/0094/0094

AUTHOR: Fedotova, O. Ya.; Shtil'man, M. I. 41 B

ORG: none

TITLE: Method of preparing polyurea. Class 39, No. 178101 15

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1966, 94

TOPIC TAGS: urea, polymer, chemical reaction, solvent action

ABSTRACT: This Author Certificate describes a method for preparing polyurea by the reaction of diisocyanate and N-substituted aromatic diamine in a solvent medium followed by water-vapor treatment of the reaction mixture. In order to improve the mechanical properties of polyurea, dicyanoethylated diamine is suggested as an N-substituted aromatic diamine. [LD]

SUB CODE: 07 / SUBM DATE: 03Nov64

Card 1/1 UDC: 678.666'440'430

L 23535-66 EWP(j)/EWT(m) RM/JW
ACC NR: AP6002213 SOURCE CODE: UR/0153/65/008/005/0874/0875

AUTHOR: Fedotova, O. Ya.; Shtil'man, M. I.; Losev, I. P. (Deceased) 39

ORG: Moscow Chemical-Technological Institute im. D. I. Mendeleyev, Department of Technology of Organic and Elemental Organic High Molecular Compounds (Moskovskiy khimiko-tekhnologicheskiy institut, Kafedra tekhnologii organicheskikh y elementoorganicheskikh vysokomolekulyarnykh soyedineniy) B

TITLE: Cyanethylation of diamines. V. The nature of hydrogen bonds in cyanethylated diamines 7,44,55

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 8, no. 5, 1965, 874-875

TOPIC TAGS: hydrogen bonding, spetroscopy

ABSTRACT: Using the base-line technique, the relation of the concentration of dichloroethane solutions of N,N'-di(β-cyanethyl)-p-phenylenediamine (I), N,N'-di(β-cyanethyl)-4, 4'-diaminodiphenylmethane (II), and N,N'-di(β-cyanethyl)-4, 4'-diamino-3,3'-dimethyldiphenylmethane (III) to Buger-Beer's law was studied by infrared spectroscopy at 3395,3435; 3410,3444; and 3415,3452 cm^{-1}, respectively. At all experimental concentrations (0.05, 0.1, 0.15, 0.2, 0.3, and 0.5 M) the absorption of the N-H frequency of I was linearly proportional to its concentration. At a concentration of 0.2M, a marked deviation of the N-H bond absorption from Buger-

Card 1/2 UDC: 547.553

L 23535-66

ACC NR: AP6002213

Beer's law was observed in II and III. Due to the crystallization, studies with high concentrations were impossible. The different behavior of the amines was considered due the size of the molecules, hence the different density of their molecules per unit volume. At lower concentrations, the amines are considered to have intramolecular H-bonds and at higher concentrations intermolecular ones. According to Stuart-Briegleb's molecular models, such bonds appear sterically possible, having a theoretical length of $(2.9\text{-}3.0)\cdot10^{-8}$ cm. Orig. art. has: 2 fig. and 1 formula.

SUB CODE: 20,07/ SUBM DATE: 06Sep63/ ORIG REF: 001/ OTH REF: 001

Card 2/2 lb

L 01062-67 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6019544 (A) SOURCE CODE: UR/0190/66/008/006/1094/1097

AUTHOR: Fedotova, O. Ya.; Shtil'man, M. I.; Kolesnikov, G. S.; Chernysheva, V. G. 32 31 B

ORG: Moscow Institute of Chemical Technology im. D. I. Mendeleyev (Moskovskiy khimiko-tekhnologicheskiy institut)

TITLE: Polyamides based on higher unsaturated dicarbolic acids

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 6, 1966, 1094-1097

TOPIC TAGS: polyamide, polymer structure, polycondensation, polymerization kinetics, DICARBOXYLIC ACID

ABSTRACT: Polycondensation of 6-dodecene-1,12-dicarboxylic acid and 6,10-hexadecadiene-1,16-dicarboxylic acid and their dimethyl esters with hexamethylenediamine was studied and the properties of the product polyamides were determined. The object of the work was to determine optimum polycondensation conditions. The first phase of the polycondensation was conducted either in an inert gas atmosphere or in a sealed ampoule by heating the reaction mixtures for 3-7 hours at 170°-300°C. This was followed by 3-7 hour heating at 180°-190°C at 3 mm Hg pressure. The starting mixtures contained 1-5 mol % (based on hexamethylenediamine) of either water or ethanol or phenol. It was found that the diesters were much less reactive than the corresponding dicarboxylic acids. The optimum condition for obtaining high molecular weight polymer (specific viscosity up to 0.35) was found to be a two-step process, the first step carried out

Card 1/2 UDC: 541.64+678.675

L 01042-67

ACC NR: AP6019544

for 5 hours in the presence of 5 wt % water, the second step carried out for 3 hours in vacuo, the temperature ranging from 170°-300°C. The polyamide product was found to be stable up to 300°C. The dependence of deformation of the polyamides upon temperature is graphed. Orig. art. has: 3 figures, 3 tables.

SUB CODE: 07/ SUBM DATE: 08Jun65/ ORIG REF: 001

awm
Card 2/2

L 01041-67 EWT(m)/EWP(j)/T RM

ACC NR: AP6019545 (A) SOURCE CODE: UR/0190/66/008/006/1098/1102

42
B

AUTHOR: Fedotova, O. Ya.; Shtil'man, M. I.; Ustinova, M. S.

ORG: Moscow Institute of Chemical Technology im. D. I. Mendeleyev (Moskovskiy khimiko-tekhnologicheskiy institut)

TITLE: Preparation of polyfunctional polyamides 1

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 6, 1966, 1098-1102

TOPIC TAGS: polyamide, IR spectrum, x ray analysis, solid mechanical property, polymer structure

ABSTRACT: Synthesis of polyhexanethylenefumar-N,N'-di(β-cyanoethyl)amide and polyhexamethylenefumar-N,N'-di-(β-amidoethyl)amide was studied. Structure by IR and x-ray spectroscopy, specific viscosity of a 5% solution in HCOOH, melting points, softening temperatures, composition (elementary analysis), and yields as a function of the concentration of the starting reagents were determined for the product polyamides. In a typical synthesis, suitable amounts of dichloroanhydride of the fumaric acid, diamine, and either an alkali or an acid were dissolved in an organic solvent or water. The mixture was then agitated (at room temperature) for 30 min at 400 rpm. After reaction completion, the mixture was neutralized and the polymer was distilled off with steam, washed first with methanol and then with hot water until neutral reaction. The high-

UDC: 541.64+678.675

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L 01041-67

ACC NR: AP6019545

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est yield (81%) and the highest specific viscosity (0.13) of the polyamide product resulted when the KOH concentration in the starting mixture was equal to 1.0 mol/liter. It was found that the thermomechanical properties (dependence of deformation upon temperature) of the polyamides with $CH_2CH_2CONH_2$-substituents were superior to those of the polyamides with CH_2CH_2CN-substituents. Orig. art. has: 4 figures, 1 table.

SUB CODE: 07/ SUBM DATE: 08Jun65/ ORIG REF: 005

awm

Card 2/2

L 00836-67 EWT(m)/EWP(j) RM

ACC NR: AP6027778 (A) SOURCE CODE: UR/0190/66/008/008/1445/1449

AUTHOR: Fedotova, O. Ya.; Zakoshchikov, S. A. 25 B

ORG: Moscow Institute of Chemical Technology im. D. I. Mendeleyev (Moskovskiy khimiko-tekhnologicheskiy institut)

TITLE: Synthesis of polyoxamides by interphase polycondensation of oligomers

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 8, 1966, 1445-1449

TOPIC TAGS: polyoxamide, oligomer, polycondensation

ABSTRACT: A method has been proposed for obtaining polyoxamides using the reaction of an oxalyl chloride and 4,4'-diamino-3,3'-dimethyldiphenylmethane with a specific viscosity up to 1.17. The reaction is carried out in two stages: the first stage consists of reaction of the above-mentioned substances in anhydrous organic solvent, which results in oligomer (mainly dimer) formation; the second stage consists of hydrolysis and interphase polycondensation. The characteristics

Card 1/2 UDC: 541.64+678.01:54+678.675

L 00836-67

ACC NR: AP6027778

of oligomers and high molecular polyoxamides are given. The main features of interphase polycondensation of oligomers are studied. Orig. art. has: 6 figures, 6 formulas, and 3 tables. [Based on authors' abstract] [NT]

SUB CODE: 07/ SUBM DATE: 09Jul65/ ORIG REF: 005/ OTH REF: 004

Card 2/2 hs

L 08459-67 EWP(j)/EWT(m) RM

ACC NR: AP6030905 (A,N) SOURCE CODE: UR/0080/66/039/008/1890/1892

AUTHOR: Fedotova, O. Ya.; Shtil'man, M. I.; Burmistrov, S. I.

ORG: none

TITLE: Use of arenesulfamides and sulfonic esters as plasticizers of polyureas

SOURCE: Zhurnal prikladnoy khimii, v. 39, no. 8, 1966, 1890-1892

TOPIC TAGS: organic amide, plasticizer, urea

ABSTRACT: The plasticizing effect of amides and esters of sulfonic acids on polyureas was studied by using polyurea with a molecular weight of about 20,000. The following plasticizers were tested: phenyl ester of diethylbenzenesulfonic acid, phenyl ester of polyalkylsulfonic acids, benzenesulfonylisopropylamide, p-isopropyl-benzenesulfonylisopropylamide, and 3,5-diethylbenzenesulfonylisopropylamide. These compounds were introduced into the reaction medium, and after the polymer was obtained, films were prepared by rolling and were tested for tensile strength and specific elongation. Curves of the temperature dependence of the deformation were plotted. The best plasticizing effect was displayed by aryl sulfides with the most branched radicals. In all cases, the introduction of the plasticizer caused the appearance of highly elastic properties, but to various degrees. The properties of the plasticized films were much better than those of unplasticized samples: they were not brittle, were sufficiently elastic, and

Card 1/2 UDC: 66.063.72+547.279

L 08459-67

ACC NR: AP6030905

withstood repeated flexures without any changes in external appearance. Orig. art. has: 1 figure and 1 table.

SUB CODE: 11/ SUBM DATE: 13Apr64/ ORIG REF: 005/ OTH REF: 007

Card 2/2

FEDOTOVA, P. M.

Fedotova, P. M. "The growth and development of chicks in connection with the weight of incubation eggs." Moscow Order of Lenin Agricultural Academy imeni K. A. Timiryazev. Moscow, 1956. (Dissertation for the Degree of Candidate in Agricultural Science)

So: Knizhnaya letopis', No. 27, 1956. Moscow. Pages 94-109; 111.

FEDOTOVA, P. M.

Raise chickens. IUn.nat. no.2:35 My '56. (MLRA 9:11)
(Poultry)

FEDOTOVA, R. D.

42242. FEDOTOVA, R. D. Nekotoryye voprosy razvitiya promyshlennosti stroitel'nykh materialov moldavskoy SSR v iv-y pyatiletke.-s kart. Nauch. Zapiski moldav. Nauch.-issled. Bazy akad. nauk SSSR, T. I, vyp. 1, 1948, c. 181-92.

So: Letopis' Zhurnal'nykh Statey, Vol. 47, 1948.

FELOTOVA, R. D.

27208 FELOTOVA, R. D. - Tsennyy Pochin Vnedrit' V Proizvodstvo. (Reglament-Ik. Rezhim Raboty Vinodel'cheskoy Fron-Sti. Opyt Kishinevsk. Zaveda). Vinodelie I Vinogradarstvo Moldav-II, 1949, No 4, s. 23-25.

So: Letopis' Zhurnal'nykh Statey, Vol. 36, 1949.

[redacted], Revol'da Davydovna

EPT.
.R93139

OT RUCHNOGO TRUDA K MASHINNOY INDUSTRII (FROM MANUAL LABOR TO MACHINE INDUSTRY) KISHINEV, GOSIZDAT, 1956. 98 p. DIAGRS., MAPS, TABLES. BIBLIOGRAPHICAL FOOTNOTES.

FEDOTOVA, R.D.; MOROZ, V.F.; PARUTA, V.T.; VEYLINSON, L.I.; VOROB'YEV, A.A.; DEMCHENKO, I.I., red.; IVANCHUK, P.K., red.; RADUL, M.M., red.; SHARGORODSKIY, T.I., red.; DMITRENKO, N.Z., red.; MANDEL'BAUM, M.Ye., tekhn. red.

[Some problems in developing the wall materials industry in the Moldavian S.S.R. in 1959 - 1965] Nekotorye voprosy razvitiia promyshlennosti stenovykh materialov v Moldavskoi SSR v 1959 - 1965.gg. [By] R.D.Fedotova i dr. Kishinev, Izd-vo "Shtiintsa" Moldavskogo filiala AN SSSR, 1960. 229 p. (MIRA 17:2)

USIK, P.V., red. ; FEDOTOVA, R.D., red.; POSAZHENNIKOVA, Ye.F., red.

[Increasing the economic efficiency of capital investments in the industry of the Moldavian S.S.R.] K voprosu povysheniia ekonomicheskoi effektivnosti kapital'nykh vlozhenii v promyshlennosti MSSR, Kishinev, Izd-vo "Shtiintsa" AN Moldavskoi SSR, 1962. 99 p. (MIRA 18:5)

BORTNIKOV, V.B., kand. ekon. nauk, red.; MEDNEK, V.P., red.; FEDOTOVA, R.D., red.; DMITRENKO, N.Z., red.; POLONSKIY, S.A., tekhn.red.

[Problems of the economics of capital construction in the Moldavian S.S.R.]Voprosy ekonomiki kapital'nogo stroitel'stva v Moldavskoi SSR; materialy. Kishinev, Shtiintsa, 1962. 145 p. (MIRA 16:2)

1. Nauchno-ekonomicheskaya konferentsiya po stroitel'stvu v Moldavskoy SSR, Kishinev, 1961. 2. Zamestitel' predsedatel' Gosudarstvennogo komiteta Soveta Ministrov SSSR po delam stroitel'stva Moldavskoy SSR (for Mednek). 3. Zaveduyushchiy sektorom ekonomiki stroitel'noy industrii Instituta ekonomiki Akademii nauk Moldavskoy SSR(for Bortnikov).

(Moldavia--Construction industry--Management)

FEDOTOVA, R. G.

Treatment of infectious thrombosis of the cavernous sinus and meningitis by Burdenko's technic of penicillin injection into the common carotid artery. Khirurgiia, Moskva no.7:72-74 July 1951. (CLML 21:1)

1. Of the Surgical Division (Head -- Prof. K. N. Cherepnin), Tomsk Municipal Clinical Hospital.

FEDOTOVA, R. G.:

FEDOTOVA, R. G.: "The effect of narcotic sleep on the development and course of experimental acute suppurative gonitis in young rabbits". Tomsk, 1955. Chair of Children's Surgery and Chair of Pathological Anatomy, Tomsk Medical Inst.
(Dissertations for the degree of Candidate of Medical Sciences.)

SO: Knizhnava Letopis' No. 50. 10 December 1955. Moscow.

FEDOTOVA, R.G., kand.med.nauk (Tomsk, pr. S.M.Kirova, d.22, kv.1)

Abdominal purpura in children [with summary in English]. Vest. khir. 80 no.2:89-94 F '58. (MIRA 11:3)

1. Iz kliniki detskoy khirirgii (zav.-prof. I.S.Vengerovskiy) i infektsionnoy bol'nitsy im. G.Ye. Sibirtseva (gl. vrach-S.Ye. Gratulevich)

(PURPURA, NONTHROMBOPENIC, in inf. & child
Schonlein-Henoch synd., clin. manifest (Rus)

FEDOTOVA, R.G., kand.med.nauk (Sverdlovsk 27, ul. Zhdanova, d.3,kv.160)

Late results of osteoplastics in pseudarthrosis and extensive bone defects of the leg in children. Ortop. travm. i protez. 24 no.2:44-50 F'63. (MIRA 16:10)

1. Iz Sverdlovskogo instituta travmatologii i ortopedii (dir. kand.med.nauk Z.P.Lubegina).
(LEG — ABNORMITIES AND DEFORMITIES)
(ORTHOPEDIA)

L 52105-65 EPF(c)/EPR/EWP(j)/EWA(c)/EWT(m) Pc-4 Pr-4/Ps-4 RPL WW/RM

ACCESSION NR: AP5015237 UR/0286/65/000/009/0021/0021

AUTHORS: Sakharovskaya, G. B.; Kornuyev, N. N.; Larikov, Ye. I.; Zhigach, A. F.; Fedotova, R. I.

TITLE: A method for obtaining alkylalumoxanes. Class 12, No. 170493 15 30 B

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 9, 1965, 21

TOPIC TAGS: alkylalumoxane, aluminium alkyl, alkyl ester

ABSTRACT: This Author Certificate presents a method for obtaining alkylalumoxanes by interacting aluminum alkyls with water. To simplify the process, the reaction is conducted in the presence of simple alkyl esters.

ASSOCIATION: none

SUBMITTED: 24Feb64 ENCL: 00 SUB CODE: OC

NO REF SOV: 000 OTHER: 000

Card 1/1 pb

TSIRLIN, Yu.A.; FEDOTOVA, S.A.

Furfurole content of artificially dewatered peat at the Boksitogorsk plant. Torf.prom. 36 no.8:13-15 '59.
(MIRA 13:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidroliznoy i sul'fitnospirtovoy promyshlennosti.
(Boksitogorsk--Peat) (Boksitogorsk--Furaldehyde)

MEL'NIKOV, N.P.; TSIRLIN, Yu.A.; FEDOTOVA, S.A.; BOBOVNIKOV, B.M.; IVANOVA, E.K.

Continuous neutralization of furfurole-containing vapors. Gidroliz. i lesokhim. prom. 16 no.7:20-23 '63. (MIRA 16:11)

1. Godudarstvennyy nauchno-issledovatel'skiy institut gidroliznoy i sul'fitnospirtovoy promyshlennosti (for Mel'nikov, TSirlin, Fedotova). 2. Andizhanskiy gidroliznyy zavod (for Bobovnikov, Ivanova).

ACCESSION NR: AT4007040 S/2598/63/000/010/0188/0201

AUTHOR: Fedotov, S. G.

TITLE: Composition and structure dependence of elastic properties of titanium alloys

SOURCE: AN SSSR. Institut metallurgii. Titan i yego splavy*, no. 10, 1963. Issledovaniya titanovy*kh splavov, 188-201

TOPIC TAGS: titanium alloy, titanium alloy property, titanium alloy elastic property, titanium molybdenum alloy, titanium vanadium alloy, titanium niobium alloy, titanium aluminum alloy, titanium tin alloy

ABSTRACT: Elastic properties were determined for titanium and for five binary titanium alloys (Ti-Mo, Ti-V, Ti-Nb, Ti-Al, Ti-Sn) of widely varying compositions. The modulus of elasticity and of displacement were found to be lower in iodide Ti than in Ti extracted by magneso-thermic methods. Mo and Nb reduced the modulus of (1) annealed α-Ti, (2) $\alpha+\beta$ Ti, and (3) Ti alloys annealed from the β phase, while V reduced the modulus of (1) and (2). Aluminum markedly increased Young's modulus, in some alloys to 19,000 (Ti-Al) or 15,000 kg/mm^2 (Ti_3Al). Tin

Card 1/2

ACCESSION NR: AT4007040

does not affect the modulus of α-Ti at normal temperatures. Loss of modulus upon heating is less with α-Ti alloys of higher tin content than those of lower tin content or that of pure Ti. Ti_3Sn offers the best elastic properties, but even a slight alteration of the stoichiometric relationship in the Ti_3Sn alloy markedly reduces these values. A close relationship exists between the curves of $\beta \rightleftarrows \alpha + \beta$ transformation in Ti-Mo, Ti-V and Ti-Nb alloy systems, and the curves of $\alpha \rightleftarrows \alpha + \beta$ transformation. "The experimental data on the Ti-Mo, Ti-V and Ti-Nb alloys were obtained in cooperation with O. K. Belousov, those on the Ti-Al and Ti-Sn alloys were obtained in cooperation with T. T. Nartova and Ye. P. Sinodova." Orig. art. has: 21 curves.

ASSOCIATION: Institut metallurgii AN SSSR (Metallurgical Institute AN SSSR)

SUBMITTED: 00 DATE ACQ: 27Dec63 ENCL: 00

SUB CODE: MM NO REF SOV: 020 OTHER: 018

Card 2/2

SAL'NIKOVA, A.; FEDOTOVA, T.

Brief information. Zashch. rast. ot vred. i bol. 6 no.8:31 Ag '61. (MIRA 15:12)

(Plants, Protection of)

FEDOTOVA, T. A.

Visible blood vessels of the eye and of the retina in coarctation of the aorta. Vest. oft. 71 no.2:3-12 Mr-Ap '58. (MIRA 11:4)

1. Kafedra glaznykh bolezney (zav.-prof. N.A. Pletneva) II Moskovskogo meditsinskogo instituta imeni N.I. Pirogova i Kafedra fakul'tetskoy khirurgicheskoy kliniki (zav.-akad. A.N. Bakulev).

(COARCTATION OF AORTA, pathol.
constriction of blood vessels of ocular fundus & retina)
(EYE, blood supply
vasc. constriction of fundus in coarctation of aorta)
(RETINA, blood supply
vasc. constriction in coarctation of aorta)

FEDOTOVA, T.A.; KOGAN, R.P.

Vascular system of the eye in congenital defects of the tricuspid valve (Ebstein's anomaly) according to clinico-morphological data. Vest. oft. 73 no. 5:28-32 S-O '60. (MIRA 14:1)
(HEART—ABNORMITIES AND DEFORMITIES)
(EYE—BLOOD SUPPLY)

FEDOTOVA, T. A.

Cand Med Sci - (diss) "Organ of sight during several congenital defects of the heart." Moscow, 1961. 15 pp; (Academy of Medical Sciences USSR); 250 copies; price not given; (KL, 5-61 sup, 207)

FEDOTOVA, T.A. (Moskva, Khrushchevskiy per.,d.5,kv.23); KOGAN, R.P.

Clinicomorphological changes in the eye related to congenital vitium cordis of the cyanotic type. Grud. khir. 1 no.5:43-51 S-O '61. (MIRA 15:3)

1. Iz glaznogo i patologoanatomicheskogo otdeleniy Gorodskoy klinicheskoy bol'nitsy No.1 imeni Pirogova (glavnyy vrach - zasluzhennyy vrach RSFSR L.D. Chernyshev, nauchnyye rukovoditeli - prof. N.A. Pletneva i Ya.L. Rapoport).
(EYE--DISEASES AND DEFECTS)
(HEART--DISEASES)

SEMENOVA, A.P.; FEDOTOVA, T.G.; KHOMCHENKO, G.P.

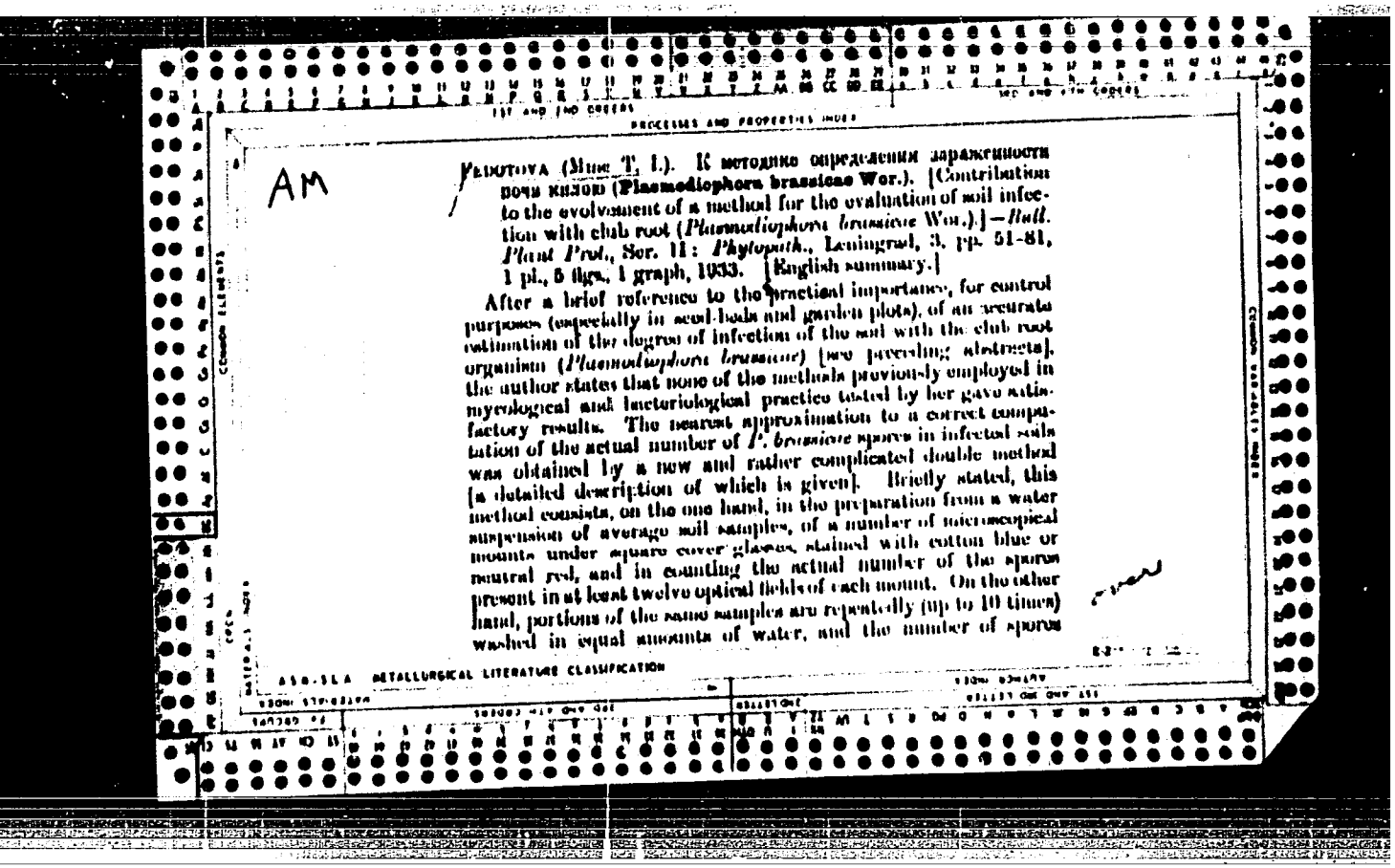
Effect of poisons on hydrogen adsorption by iridium in the presence of electrolytes. Vest. Mosk. un. Ser. 2: Khim. 20 no.6:47-49 N-D '65. (MIRA 19:1)

1. Kafedra obshchey khimii Moskovskogo universiteta. Submitted April 5, 1965.

FEDOTOVA, T.I.

"On the New Stage in the Development of Phytopathology," Trudy po Zashchite Rastenii, Serila 2, no. 3, 1933, pp. 3-7 423.92 I.54P

SO: SIRA SI90-15, 15 Dec. 1953



PROCESSES AND PROPERTIES INDEX

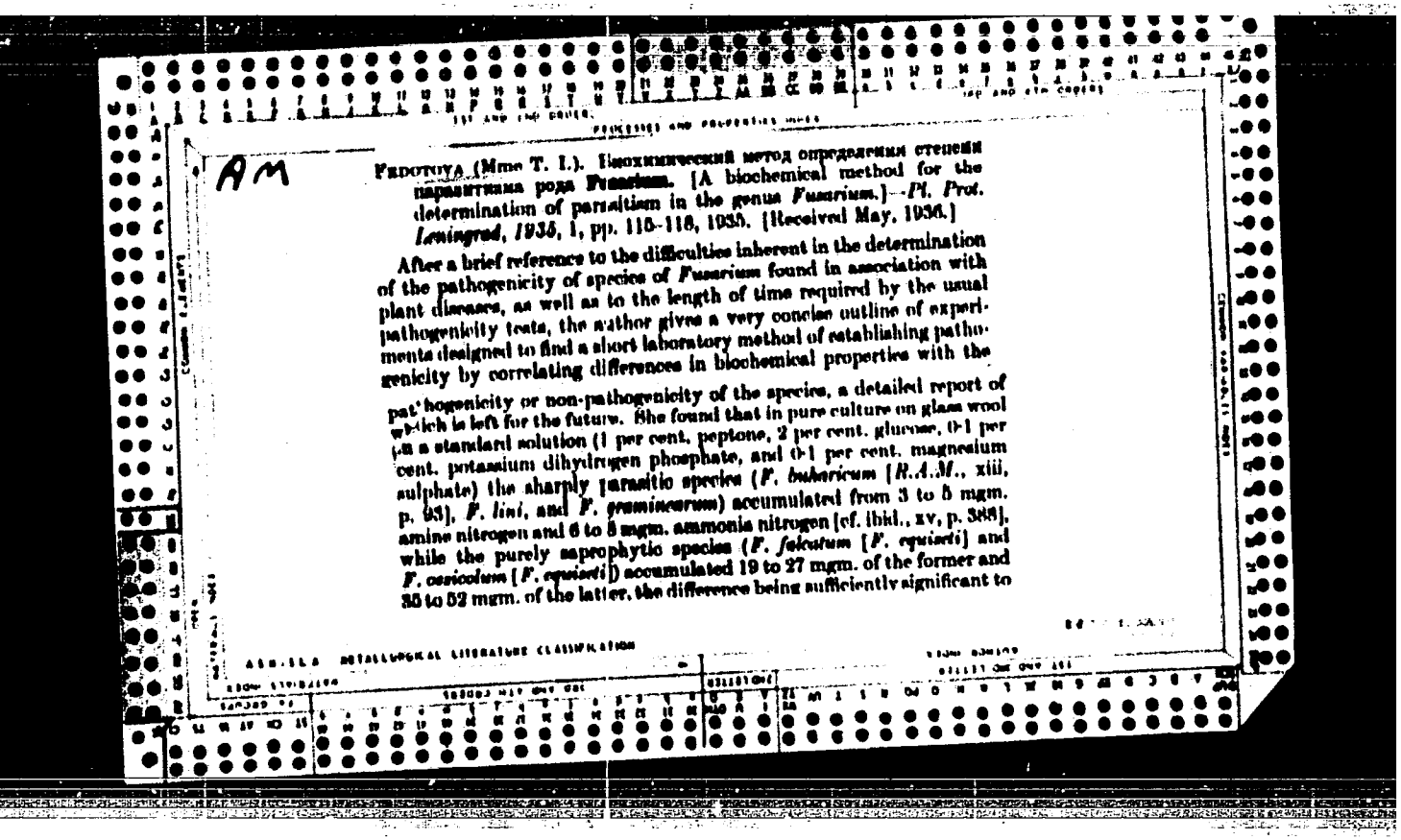
AM

Pelshova (Шелк Т. І.). К методике определения зараженности почв килой (**Plasmodiophora brassicae Wor.**). [Contribution to the evolvement of a method for the evaluation of soil infection with club root (*Plasmodiophora brassicae* Wor.).]—*Bull. Plant Prot.*, Ser. II: *Phytopath.*, Leningrad, 3, pp. 51-81, 1 pl., 5 figs., 1 graph, 1933. [English summary.]

After a brief reference to the practical importance, for control purposes (especially in seed-beds and garden plots), of an accurate estimation of the degree of infection of the soil with the club root organism (*Plasmodiophora brassicae*) [see preceding abstracts], the author states that none of the methods previously employed in mycological and bacteriological practice tested by her gave satisfactory results. The nearest approximation to a correct computation of the actual number of *P. brassicae* spores in infected soils was obtained by a new and rather complicated double method [a detailed description of which is given]. Briefly stated, this method consists, on the one hand, in the preparation from a water suspension of average soil samples, of a number of microscopical mounts under square cover-glasses, stained with cotton blue or neutral red, and in counting the actual number of the spores present in at least twelve optical fields of each mount. On the other hand, portions of the same samples are repeatedly (up to 10 times) washed in equal amounts of water, and the number of spores

A50-51A METALLURGICAL LITERATURE CLASSIFICATION

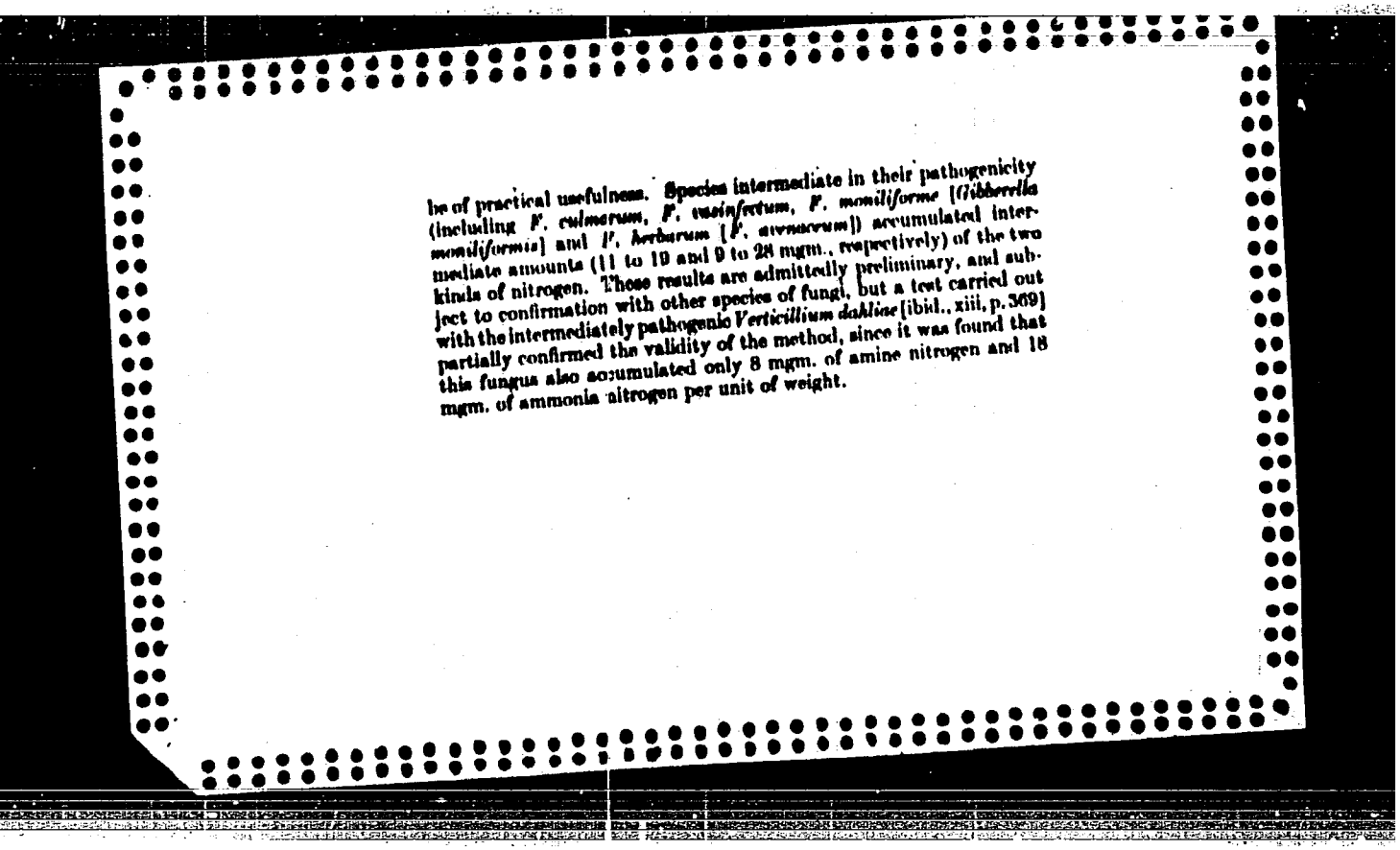
present in each washing are separately counted and added in a grand total, the results of both operations being then compared and averaged. This method should be supplemented by the determination of the percentage of spores that are in a viable condition in the soil, for which purpose the plasmolysing effect of concentrated sugar solutions on the living spores of *P. brassicae* [*B.A.M.*, VIII, p. 747] may be successfully used. Preliminary tests indicated that the soil samples should not be kept for longer than four days under laboratory conditions, as the viability of the *P. brassicae* spores contained in them rapidly declines after this interval.



AM

Федотова (Mme T. I.). Биохимический метод определения степени паразитизма рода **Fusarium**. [A biochemical method for the determination of parasitism in the genus *Fusarium*.]—*Pl. Prot. Leningrad, 1935*, 1, pp. 115–118, 1935. [Received May, 1936.]

After a brief reference to the difficulties inherent in the determination of the pathogenicity of species of *Fusarium* found in association with plant diseases, as well as to the length of time required by the usual pathogenicity tests, the author gives a very concise outline of experiments designed to find a short laboratory method of establishing pathogenicity by correlating differences in biochemical properties with the pathogenicity or non-pathogenicity of the species, a detailed report of which is left for the future. She found that in pure culture on glass wool in a standard solution (1 per cent. peptone, 2 per cent. glucose, 0·1 per cent. potassium dihydrogen phosphate, and 0·1 per cent. magnesium sulphate) the sharply parasitic species (*F. bulbigenum* [*R.A.M.*, xiii, p. 93], *F. lini*, and *F. graminearum*) accumulated from 3 to 5 mgm. amino nitrogen and 6 to 8 mgm. ammonia nitrogen [cf. ibid., xv, p. 388], while the purely saprophytic species (*F. falcatum* [*F. equiseti*] and *F. cerealum* [*F. equiseti*]) accumulated 19 to 27 mgm. of the former and 35 to 52 mgm. of the latter, the difference being sufficiently significant to



lue of practical usefulness. Species intermediate in their pathogenicity (including *F. culmorum*, *F. vasinfectum*, *F. moniliforme* [*Gibberella moniliformis*] and *F. herbarum* [*F. avenaceum*]) accumulated intermediate amounts (11 to 19 and 9 to 28 mgm., respectively) of the two kinds of nitrogen. These results are admittedly preliminary, and subject to confirmation with other species of fungi, but a test carried out with the intermediately pathogenic *Verticillium dahliae* [ibid., xiii, p. 369] partially confirmed the validity of the method, since it was found that this fungus also accumulated only 8 mgm. of amine nitrogen and 18 mgm. of ammonia nitrogen per unit of weight.

MEDOVOVA, T. I.

"Serological Method of Determining the Varietal Resistance of Cotton Plants to Diseases," Azshchita Rastenii, no. 5, 1935, pp. 11-32. 421 P942

SO: SIRA SI 90-15, 15 Dec. 1953

FEDOTOVA, T. I.

"Determination of Race Composition, Specialization of Parasites, and of Varietal Resistance of Plants," Itogi Nauchno- Issledovatel'skikh Rabot Vsesoiuznogo Instituta Zashchity Rastenii za 1935 Goda, 1936, pp. 484-485. 423.92 L541

SO: SIRA SI 90-15, 15 Dec. 1953

FEDOTOVA, T. I.

"Value of Serological Method in Determining the Resistance of Cotton Varieties to Diseases," Itogi Nauchno-Issledovatel'skikh Rabot Vsesoiuznogo Instituta Zashchity Rastenii za 1936 Goda, part 2, 1937, pp. 268-270. B.P.I. Translation 839. 423.92 L54I

SO: SIRA SI 90-15, 15 Dec. 1953